

REMARKS

Claims 1-31 are pending. By this Amendment, claims 1-3, 8 and 11-16 are amended, and claims 17-31 are added. The original claims are amended to correct obvious typographical informalities, to correct the punctuation used in those claims, and to improve the grammar of those claims. Newly-added independent claims 17 and 27 are based upon original independent claims 1 and 12, respectively, except that they recite "means for outputting visible light and infrared light...", "infrared image-capturing means...", and "visible image-capturing means..." instead of "an infrared component separator...", "an infrared image-capturing device...", "a visible component separator...", and "a visible image-capturing device...". Dependent claim 18 is directed to a particular embodiment for the above-noted features that are recited in claim 17. Support for the "means for outputting visible light and infrared light..." can be found in the original specification at, for example, page 25, lines 3-7 and page 30, line 20 - page 31, line 1. Support for the infrared image-capturing means and for the visible image-capturing means can be found in the original specification at, for example, page 30, line 20 - page 32, line 2. Newly-added dependent claims 19-26 and 28-31 are based upon original dependent claims 4-11 and 13-16, respectively. Accordingly, no new matter is added by the above amendments.

Applicant notes with appreciation the identification of allowable subject matter in claims 6-11 and 14-16. Applicant respectfully submits that all pending claims are in condition for allowance for at least the reasons set forth below.

Claims 1-5, 12 and 13 stand rejected under 35 U.S.C. §103(a) over US 2003/0128889 to Maeda et al. in view of U.S. Patent No. 5,396,282 to Ogikubo. This rejection is respectfully traversed.

All independent claims of this application recite that the position of the image forming optical system relative to the transmissive original for a visible image forming position at

which the visible light component of the image light flux is formed on a visible image-capturing device/means is determined based upon the infrared image signal. Thus, the independent claims of this application are directed to an image reading device, or a storage medium storing a control procedure for an image reading device, in which the position of an image forming optical system relative to a transmissive original is determined for forming a visible image at which the visible light component of the image light flux is formed on a visible image-capturing device/means based upon an infrared image signal. The claimed features are advantageous over systems that use only the visible image signal(s) to determine the focus position for obtaining the visible image data. See the specification at, for example, page 7, line 7 - page 10, line 9 and page 38, lines 7-13. None of the applied references discloses or suggests such a combination of features.

Maeda et al. does not use the infrared information that it obtains in order to determine a position of the image optical system when detecting the visible image information from a transmissive original. Maeda et al. uses the infrared information in order to correct the visible image information, but not to determine the position of the imaging optical system when the visible image information is captured. See, for example, paragraphs 0010 and 0091 of Maeda et al.

The Office Action refers to page 11, paragraph 0135 of Maeda et al. However, this portion of Maeda et al. is referring to the fact that the position of the infrared image may differ from the position of the visible image (this is known as registrational error), and therefore this fact (i.e., the registrational error) must be taken into account when correcting the visible image information based upon the infrared image information. See, for example, paragraphs 0016-0017 and 0135-0138. Maeda et al. does not, however, teach using the infrared image information to determine the position of the image optical system that is to be used when obtaining the visible image information.

Rather, Maeda et al. clearly teaches that the position of the optical system is determined for each color component (the visible image color components R, G and B, and the infrared (IR) component) based only upon information obtained for those respective components. That is, Maeda et al. teaches using R image information in order to determine the best focus position for the R image, G information in order to determine the best focus position for the G image, B information for determining the best focus position for the B image and IR information for determining the best focus position for the IR image. See, for example, the auto focus operations described in paragraphs 0144-0163 in connection with Figs. 18-21.

Accordingly, Maeda et al. does not disclose or suggest the combination of features recited in the independent claims of this application. In particular, Maeda et al. does not disclose or suggest determining the position of the image forming optical system relative to the transmissive original for use in obtaining the claimed visible image signal, based upon an infrared image signal.

Ogikubo does not provide the above-noted deficiencies in Maeda et al. Accordingly, Applicant respectfully submits that all pending claims are patentable over Maeda et al. and Ogikubo.

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,



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MAC/ccs

Attachments:

Petition for Extension of Time
Amendment Transmittal

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